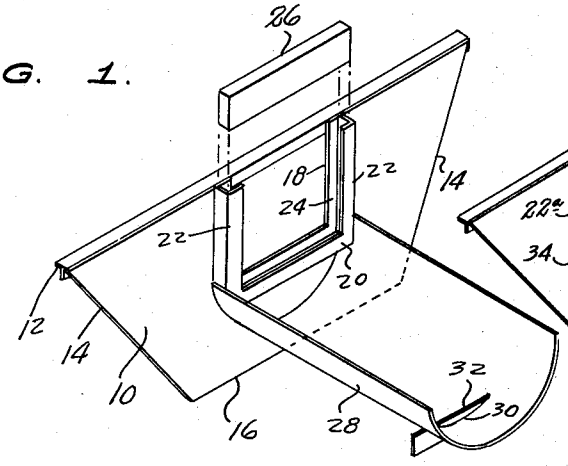
March 15, 1960 D. M. WARING 2,928,251

COMBINATION IRRIGATION DROP AND DAM

Filed April 13, 1956

FIG. 1.



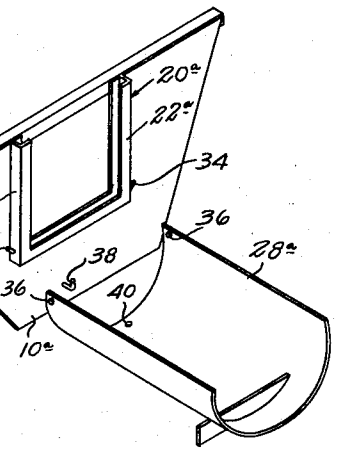


FIG. 4.

FIG. 3.

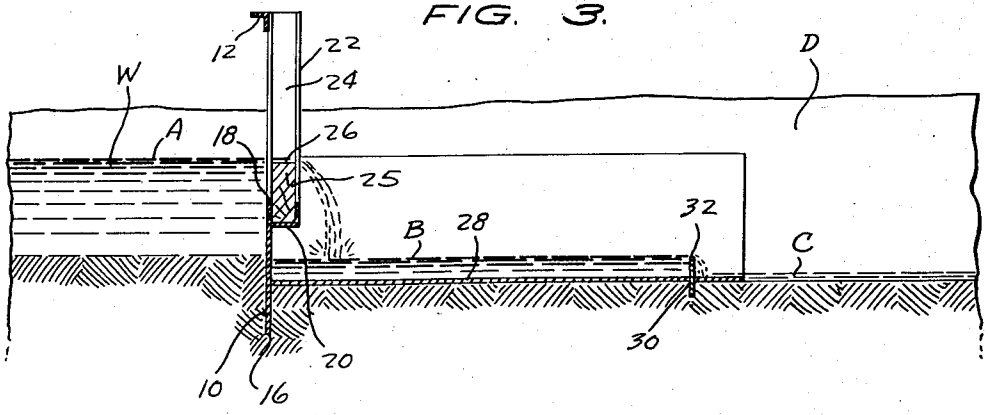
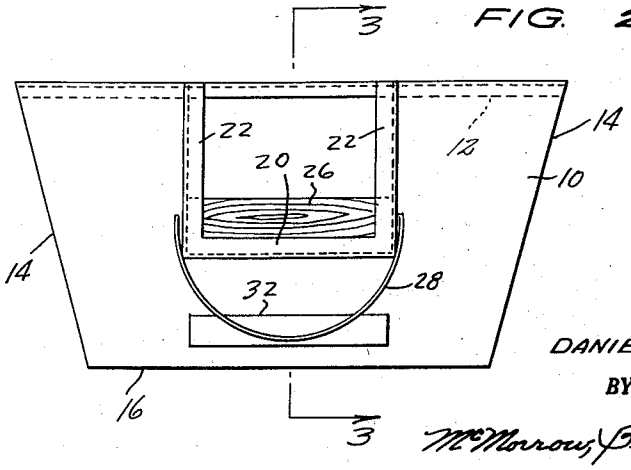


FIG. 2.



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COMBINATION IRRIGATION DROP AND DAM

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1 Claim. (Cl. 61—29)

This invention relates to a dam and spillway for an irrigation ditch, the purpose of which is to adjust the level of the water in the upper level of the irrigating lateral to a desired elevation.

Summarized briefly, the invention includes a dam adapted for insertion in position across an irrigation ditch at any desired location in the ditch. Projecting forwardly from and rigid with the dam is a trough, the purpose of which is to keep the churning water below the spillway from cutting into or washing away the sides and bottom of the lateral. A baffle adjacent the outer end of the trough is provided, which assists in stopping the swirling motion of the water as it flows off the end of the trough, and which further serves to brace the dam. In the dam there is provided a centrally disposed, upwardly opening recess, bounded at its sides and bottom by a slotted retainer. The retainer is adapted to receive an insert, which has the effect of shortening the depth of the recess, thus to effect an adjustment in the upper level of the lateral.

Among important objects of the invention are to provide a combination drop and dam that will be easy to install, and will be equally easy to remove whenever desired.

Another object is to provide a device as stated which can be used in the lateral in place of a canvas dam such as is presently used.

Another object is to provide a dam which, in the event of floods or changes in the ground contour, can be moved to another location with maximum speed and ease, as distinguished, for example, from a permanent concrete structure which in these circumstances would be totally lost.

Other objects will appear from the following description, the claims appended thereto and from the annexed drawings in which like reference characters designate like parts throughout the several views and wherein:

Figure 1 is a perspective view of a combination drop and dam formed according to the present invention, an insert being shown removed from its associated retainer;

Figure 2 is an end elevational view of the device, on a slightly enlarged scale, as seen from the right of Figure 1;

Figure 3 is a longitudinal sectional view through the device in place in a ditch, with the insert in the retainer, on line 3—3 of Figure 2; and

Figure 4 is a fragmentary perspective view showing a modified form.

Referring to the drawings in detail, the device includes a dam member **10** in the form of a flat, vertical plate extendable fully across a ditch or lateral, and having a horizontally extending top edge to which is secured, for reinforcing purposes, a brace bar **12** of angle iron material.

The side edges **14** of the plate diverge upwardly from a horizontal bottom edge **16**, to conform to the cross sectional contour of the lateral.

Formed in the plate, medially between opposite sides

thereof, is a rectangular, upwardly opening recess **18**, through which the water W in the upper level of the lateral is adapted to flow as shown in Figure 3. Rigidly secured to one face of plate **10** is a U-shaped retainer **20**, having a horizontal bight portion extending along the bottom edges of recess **18** and having, in addition, vertical legs of side portions **22** terminating at their upper ends at the upper edge of the dam member and extending along opposite sides of the recess.

As seen in Figure 2 of the drawing, the dam member **10** is of substantially trapezoidal configuration, having a major and a minor side portion. The major side portion is considered as comprising that portion of the area of the dam member that lies above a horizontal plane coincident with the bottom, horizontal edge of the opening, in Figure 2, while the minor side portion comprises a portion of the area lying below said plane.

The retainer is formed of angle iron material throughout the length. Therefore, the side portions provide confronting, vertical guideways **24**, merging at their lower ends into a horizontal seat **25** of U-shaped cross section defined by the bight portion **20** in cooperation with plate member **10**. Removably insertable in the retainer is a horizontally disposed insert **26**, which can be formed of a length of 2 x 2 or 2 x 4 wood material. The insert is of a length coextensive with the distance between the webs of the side portions **22**, and accordingly, the insert can be dropped into the retainer, with its ends sliding downwardly within the guideways **24** until ultimately it comes to rest in the seat **25**.

In this position, the insert will project above the bottom edge of recess **18**, and as a result will cause the level of the water above the dam to remain in the level of the top surface of the insert.

Rigidly secured at its inner end to member **10**, immediately below the retainer, is an elongated, horizontally extending trough **28** of arcuate cross section (see Figure 2). This extends along the bottom of the lateral as shown in Figure 3, when the bottom edge portion of the member **10** is pressed into said bottom.

Adjacent the outer end of trough **28** there is formed therein a transverse slot **30**, and a baffle formed as an elongated, narrow, rectangular plate **32** is adapted to engage in the slot for the purpose of aiding in stopping the swirling motion of the water as the water flows off the end of the trough. The baffle is inserted in the slot from below the trough, so that the greatest portion of the baffle is disposed exteriorly of the trough as shown in Figure 2. The exteriorly disposed portion, accordingly, is adapted to embed itself in the bottom, thus to stabilize the installation.

In use of the device, the upper level of the water in the lateral will rise to the level A. The excess will spill into the trough, and due to the baffle will rise to a level B which is substantially below the level A. Due to the provision of the baffle, swirling motion of the water in the trough will be reduced to a minimum, and the excess will spill over the baffle to flow at a level C within the lateral.

Obviously, inserts **26** of different heights can be selectively employed, or alternatively, the insert can be removed completely to drop the level A to its maximum extent. The entire device with the exception of the insert and retainer can be made of sheet material, and conventional angle iron material may be employed for the brace bar **12** and retainer **20**. The trough may be crimped or lowered as necessary to stiffen the same, and it will be understood that to prevent corrosion, the entire device may be covered with a protective coating such as asphalt or tar. Alternatively, the material may be galvanized to prevent rusting.

In Figure 4, there is shown a modified construction wherein the trough 28*a* is separably connected to side portions 22*a* of a retainer 20*a* by means of laterally, outwardly projecting pins 34 on the side portions 22*a* engaged in openings 36 formed in the sides of the trough. A hook 38 on the dam member 19*a* is engageable in an opening 40 formed in the midwidth portion of the trough.

The device, as will be apparent, can be readily installed or removed, and further, can be manufactured at a minimum cost. Still further, adjustments in the upper level can be swiftly effected by the means described.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles it being considered that the invention comprehends any minor changes in construction that may be permitted within the scope of the appended claim.

What is claimed is:

In an irrigation dam, a dam member adapted to extend transversely of a ditch in a vertical plane; an elongated trough member connected at one end to and extending outwardly from the dam member, said trough member

having a transverse slot adjacent the end thereof remote from the dam member; and a baffle removably engaged in said slot to constitute an auxiliary dam member raising the level of water within the trough member, thereby to eliminate a swirling motion of the water within the trough member, said baffle having a portion thereof disposed interiorly of the trough member and the remaining portion disposed exteriorly of the trough member for embedding in the bottom of the ditch.

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