A. ROBERTSON.

HEAD GATE.

APPLICATION FILED OCT. 12, 1911.

1,027,903. **Patented May 28, 1912.**

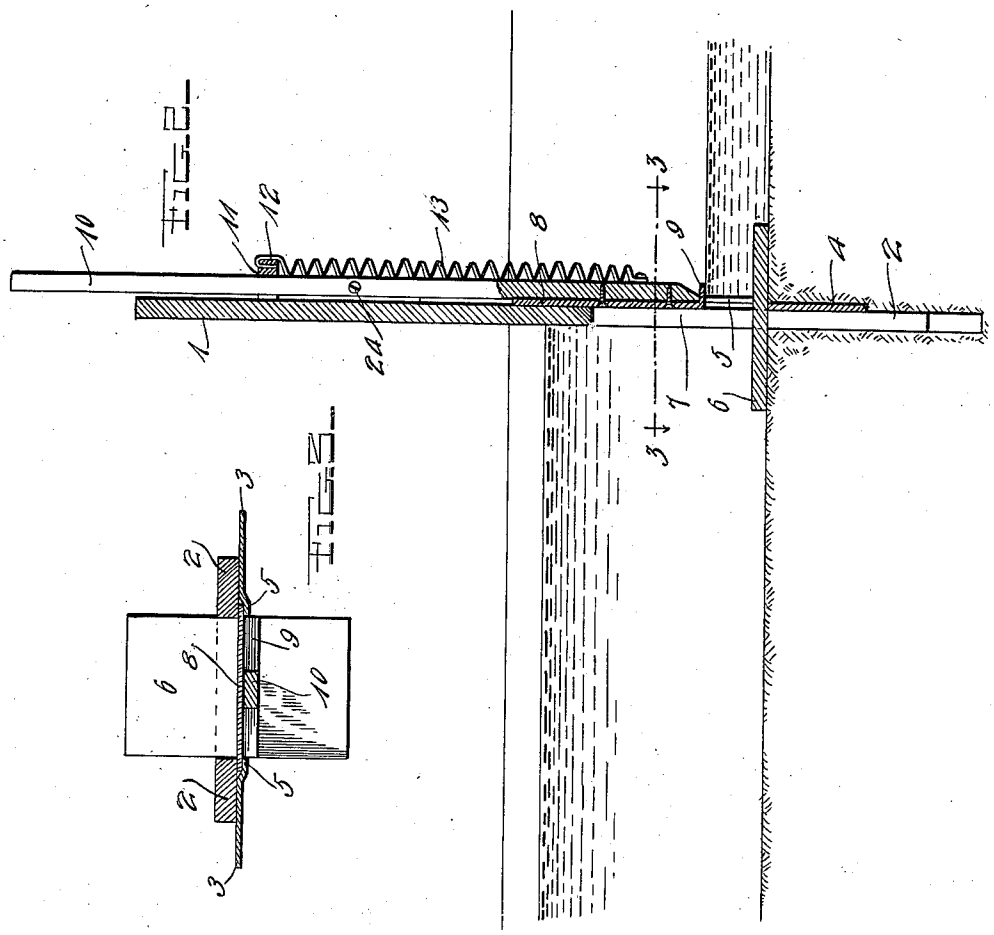

FIG. 2.

FIG. 5.

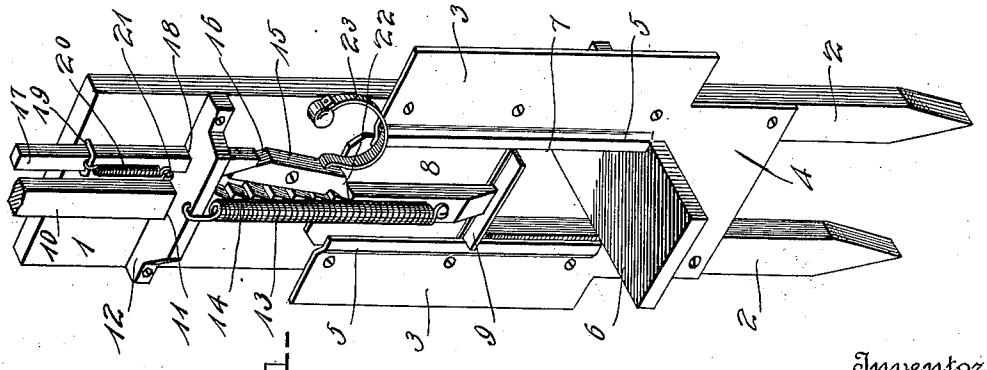

FIG. 1.

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HEAD-GATE.

1,027,903. Specification of Letters Patent. Patented May 28, 1912.

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To all whom it may concern:

Be it known that I, ALBERT ROBERTSON, a citizen of the United States, residing at Fruitvale, in the county of Adams and State of Idaho, have invented certain new and useful Improvements in Head-Gates; and I do 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 head gates for the laterals of irrigating ditches.

One object of the invention is to provide a head gate of this character having improved means for adjusting and holding the gate in its adjusted position.

Another object is to provide a gate of this character which will be simple, strong, durable and inexpensive in construction, efficient and reliable in operation and which may be readily secured in place in a ditch.

With these and other objects in view the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 is a perspective view of my improved head gate; Fig. 2 is a vertical sectional view of the gate showing the same applied to an irrigating ditch; Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 2.

In the embodiment of the invention, I provide a board or plate 1 which is adapted to be placed in the ditch and which is of sufficient width and height to form a dam across the ditch whereby the flow of water through the latter may be stopped. The plate or board 1 also comprises supporting posts or stakes 2 having pointed lower ends whereby the same may be forced or driven into the bed of the ditch.

Secured to one face of the main body of the board or plate 1 and the posts 2 are wings or extensions 3 which project a suitable distance beyond the side edges of the board or plate 1 and are adapted to be set into the opposite banks or sides of the ditch to prevent the water from washing the banks and getting by the sides of the dam. The wings 3 have formed integral with their lower ends an extension 4 which is secured to the posts or stakes 2 and is adapted to be forced down into the bottom or bed of the ditch a sufficient distance to form a stop and to prevent the water from washing the bed of the ditch and passing beneath the dam. The inner edges of the wings 3 are offset to form guide flanges 5 for the gate proper as will be hereinafter more fully described.

Secured between the posts or stakes 2 and engaging the upper edge of the stop plate 4 is a base plate or board 6 which projects beyond the opposite sides of the dam and is adapted to rest on the bed or bottom of the ditch as shown.

The space between the base 6 and the lower edge of the board 1 forms the opening 7 in the dam through which the water is permitted to flow. The size of the opening 7 is regulated by a gate 8, comprising a plate of sufficient size to cover the opening 7 and having its side edges slidably engaged with the guides 5 on the inner edges of the wings 3 as shown. On the lower edge of the gate 8 is formed a right angular stop flange 9 which, when the gate is closed forms a practically fluid tight engagement with the upper side of the base board 6. The plate 8 is secured in any suitable manner to the lower end of an operating bar 10 which is slidably mounted in a guide passage 11 formed in a supporting cleat 12 secured to one side of the board 1 near the upper end thereof as shown.

Connected at its lower end to the lower portion of the gate operating bar 10 and at its upper end to the cleat 12 is a coiled gate retracting or opening spring 13 the pressure of which is exerted to raise and hold said gate in its raised or adjusted position. In one edge of the bar 10 is formed a series of ratchet teeth or notches 14 with which are adapted to be engaged a gate holding pawl 15 which is pivotally secured to the board 1 adjacent to the toothed edge of the bar 10 as shown. The upper end of the pawl 15 is beveled as shown at 16 and with said beveled upper end of the pawl is operatively engaged the beveled lower end of a pawl releasing bar 17. The bar 17 is slidably

mounted in a guide recess 18 formed in the cleat 12 and in a guide loop or staple 19 arranged in the board 1 as shown. The pawl releasing bar 17 is retracted and normally held in a retracted and inoperative position by means of a coiled spring 20 secured at its upper end to the guide loop 19 and at its lower end to a pin 21 arranged in the bar 17. The pawl 15 is provided on its lower end with a tooth 22 which is normally held in engagement with one of the teeth 14 of the gate operating bar 10 by a bowed spring 23 secured to the board 1 as shown. In one side of the gate operating bar 10 is arranged a laterally projecting stop pin 24 which when the gate is retracted or raised to the height of the opening 7 is adapted to engage the cleat 12 thus limiting the upward movement of the gate.

In the operation of the gate assuming the same to be in a closed position it is simply necessary for the attendant to push down on or lightly tap the upper end of the pawl releasing bar 17 whereupon the engagement of the beveled lower end of said bar with the beveled upper end of the pawl will rock the latter and thus disengage the tooth 22 on the lower end thereof from the teeth of the gate operating bar whereupon the spring 13 will quickly retract or pull the gate upwardly to an open position or until the stop pin 24 comes into engagement with the cleat 12. After the gate has thus been opened to its greatest extent the operating bar is pushed downwardly thus lowering the gate until the opening 7 has been reduced to the desired size at which point the gate will be automatically held by the engagement of the pawl 15 with one of the teeth of the bar 10 as will be readily understood.

As hereinbefore stated my improved gate is designed and is particularly adapted for use in connection with the small laterals leading from the large laterals of irrigating ditches for controlling the flow of the water therethrough thus enabling the water to be quickly turned from one lateral into another and when constructed as herein shown and described a large number of gates may be readily operated by one attendant.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is:

1. A head gate for ditches comprising a plate having an opening therein, a gate slidably mounted on said plate to close said opening and to regulate the size thereof, means for automatically opening said gate, an operating bar secured to said gate and provided with teeth, a pawl mounted to engage said teeth for holding the gate in adjusted position and a pawl releasing bar operable to disengage the pawl from the teeth of said gate operating bar.

2. A head gate for ditches comprising a plate having an opening therein, a gate slidably mounted on said plate to close said opening and to regulate the size thereof, means for automatically opening said gate, an operating bar secured to said gate and provided with teeth, a pawl mounted to engage said teeth and having a beveled upper end, a slidably mounted pawl releasing bar having a beveled lower end adapted when depressed to engage the beveled upper end of the pawl thereby rocking the pawl and disengaging it from the toothed gate operating bar, and means for holding said pawl releasing bar yieldably in retracted position.

3. In a head gate for ditches a board adapted to be secured in the ditch to form a dam, and having an opening to permit the flow of water through the same, a gate having a sliding engagement with the board and adapted to close said opening and also to regulate the size thereof, an operating bar secured to said gate, means to slidably support the upper end of said bar, a gate opening spring secured to the bar whereby the gate is retracted or drawn upwardly to an open position, a series of teeth formed on said bar, a pawl adapted to engage said teeth whereby the gate is held in its adjusted position, and a spring retracted pawl releasing bar adapted to disengage the pawl from the teeth of said gate operating bar thereby permitting the gate retracting spring to open the gate.

4. In a head gate for irrigating ditches, a board adapted to be engaged with the ditch and to form a dam across the same, means to support said board in position to form an opening below the same whereby water is permitted to flow therethrough, laterally projecting wings secured to said board and adapted to be embedded in the banks of the ditch, guides formed on the inner edges of said wings, a gate having a sliding engagement with said guides, a gate operating bar secured at its lower end to the gate, means to slidably support the upper end of the bar, a coiled gate retracting spring connected with said bar and adapted to raise and hold the gate in a raised position, a series of teeth formed on said bar, a pawl pivotally mounted on said board, said pawl having a beveled upper end and having on its lower end a tooth, a spring adapted to hold the toothed lower end of the pawl in operative engage-

ment with a tooth on said gate operating bar, a slidably mounted pawl releasing bar having a beveled lower end adapted to be engaged with the beveled upper end of the pawl whereby when said releasing bar is forced downwardly the pawl will be rocked and the toothed lower end thereof thus disengaged from the teeth of the gate operating bar, and a spring adapted to retract and normally hold said pawl releasing bar in a retracted position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALBERT ROBERTSON.

Witnesses:
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RICHARD S. WILKIE.