

(No Model.)

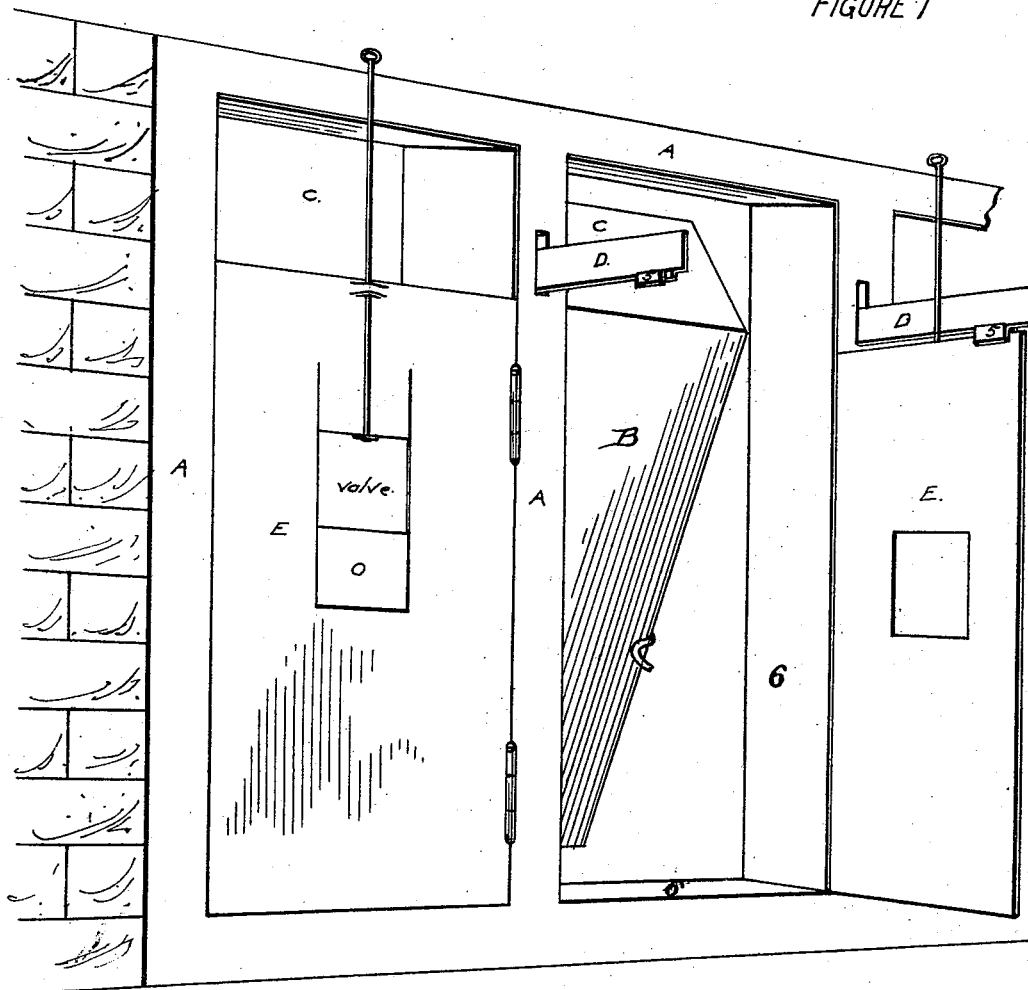
2 Sheets—Sheet 1.

J. W. MILLIGAN. & J. A. TOMLINSON.
AUTOMATIC FLOOD GATE.

No. 523,606.

Patented July 24, 1894.

FIGURE 1



Witnesses

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D. B. Berry

Inventors

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(No Model.)

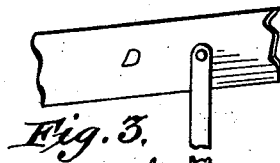
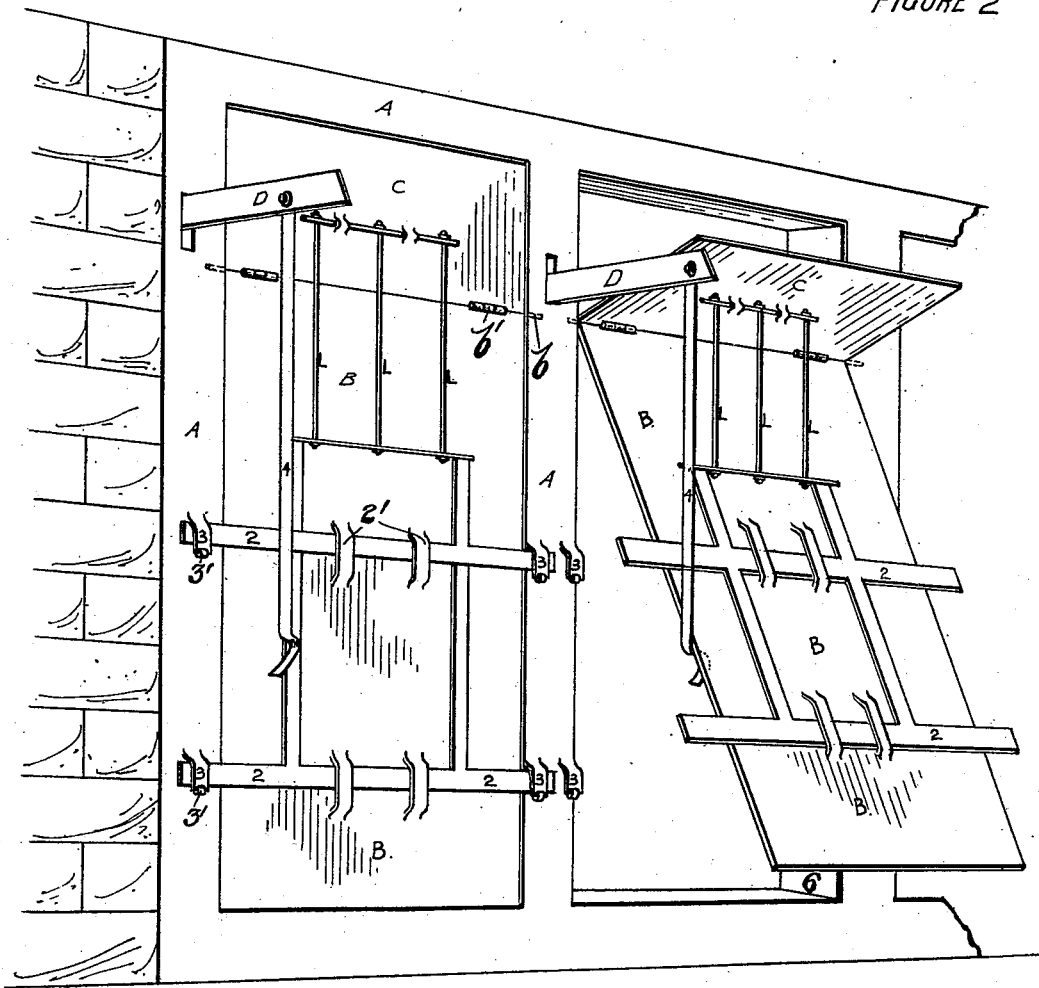
2 Sheets—Sheet 2.

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FIGURE 2



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN W. MILLIGAN AND JAMES A. TOMLINSON, OF EDDY, TERRITORY
OF NEW MEXICO.

AUTOMATIC FLOOD-GATE.

SPECIFICATION forming part of Letters Patent No. 523,606, dated July 24, 1894.

Application filed April 20, 1894. Serial No. 508,386. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. MILLIGAN and JAMES A. TOMLINSON, citizens of the United States, residing at Eddy, in the county of Eddy and Territory of New Mexico, have invented certain new and useful Improvement in Flood or Head-Gates; and we do hereby 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.

Our invention relates to improvements in flood or head-gates which are placed in dams constructed for the purpose of storing or impounding water, to relieve the dam of the extra amount of pressure caused by the increase of the water held, during unusual flows of water from any cause; particularly during heavy rises in the stream dammed, or during unusual floods.

The invention consists in an improved main and an auxiliary overflow gate and connecting mechanism; as hereinafter more fully set forth and claimed the whole being so arranged that when the water reaches the overflow gate, said gate is automatically opened and thus releases the catches of the main gate and allows it to open also because of the pressure of the water behind it and permits said water to pass off.

It also consists in the combination of the automatically operated main and auxiliary overflow gates, connecting mechanism and an automatically operated pressure resisting gate. And it also consists in the combination with the main gate, an auxiliary overflow gate and means whereby the gates can be automatically operated, of a water pressure resisting gate with a space between the said gates and valves in the pressure resisting gate.

Our invention is more fully set out in the following specification and the accompanying drawings, in which—

Figure 1. represents a perspective view of two sets of gates, as seen from the upper side, or side of the dam on which the water is impounded; the left hand gates being closed, and the right hand gates being open. Fig. 2. represents a perspective view of two sets of gates as seen from the lower side, or side of the dam, which does not face the water; the

left hand gates being closed, and the right hand gates being open, and Fig. 3. represents, respectively, a side and end elevation of the adjustable hook on the pendent swinging arm. 55

A in the drawings, represents the frames constructed in the dam to be protected and adapted to receive the gates B, C and E.

B is a gate suspended from a partition *b*, placed at the upper end of frame A, by means of hinges *b'*. This gate fits onto the lower portion of the frame A and is adapted to be secured therein by sliding bars 2 mounted in slides 2'; the ends of said bars engaging catches 3 on the frame A and thus holding gate B securely closed. 65

C represents a smaller gate fastened by hinges *b'* to the above mentioned partition bar and so constructed that it will open by dropping back. It is made to fit into frame A immediately above gate B. This auxiliary overflow gate C is connected to the vertical sliding bars 2 by means of rods L, L, as shown in Fig. 2, and in such a manner that as the upper auxiliary overflow gate C is opened by the pressure of the water, the said sliding locking bars 2, 2, are forced downward from under the catches 3 and the gate B thereby permitted to open as shown in the right hand side of Fig. 2. The projections or catches 3 are provided with anti-friction rollers 3' so that as the bars 2 are forced from under the same by the opening of the overflow gate, the friction is greatly lessened. 70 75 80

E, see Fig. 1., represents a water pressure resisting gate swung on hinges secured to the side of frame A and is made to fit into the frame exactly in front of the gate B and is made of just the same size as the gate B, but it opens out just as an ordinary door as shown in Fig. 1. on the right hand view. 85 90

When the automatic flood gate is in position ready for use in time of an expected flood, gate E is opened and held open as shown in Fig. 1., by a catch 5 fastened to the beam D which is pivoted in frame A. 95

Gate B is intended to be constructed of sufficient height to extend from the bottom of the dam to the height to which it is intended that the water shall stand in the dam, so that in case of a flood or extra flow of water, when the water rises above the top of gate B, it 100

reaches gate C, which is not fastened in place by any fastenings, and the pressure of the water soon forces gate C open and as it does so, rods L, L from gate C, and connecting gate C with the latches 2 on gate B, forces the latches 2 out of their catches 3, thus leaving gate B free to open outward, which it does at once owing to the pressure of the water against it, and thus the water is allowed to escape from above the dam and averts the danger of its being washed away.

The rear end of the beam D on the flood gate side of the dam is provided with a pendant swinging arm 4 having an adjustable hook end 4' which is adapted to engage the under side of the gate B as the latter descends by the water subsiding and thus depresses the rear end of the beam D and raises the front end carrying the catch 5 and thus releases the gate E and allows it to be automatically closed by the pressure of the water against it. The hook on the arm 4 can be adjusted to any position on said arm and thus the time for the release of the gate E is regulated. Now gate B is released from the hook end of the arm 4 and swung down to its place in the frame; the gate C is pulled back to its place in the frame just as they are shown in the left hand view of Fig. 2; as the gate C is drawn to its place, it pulls the latches 2 into the catches 3 by means of the connecting rods L, L, thus putting the gates C and B in proper position, and securely fastening gate B. A space 5 is provided in the gate between gates B and E for a purpose as will be now described. After gate B is fastened as shown, a small opening about the middle of the gate E is opened by means of the sliding door or valve as shown in Fig. 1., and this allows the water to flow in and fill up the space 6 between doors B and E, which relieves the pressure from door E and it can be easily opened out and fastened open again by the catch 5 on the end of beam D as shown in the right hand view of Fig. 1. The gate is then in the position to discharge another flood of water if that be necessary.

The materials of which these appliances are made may be iron, steel or wood or any other material to suit the strength required in each particular case.

This set of gates is useful as a simple head gate in any canal, ditch or other water way where it is necessary to have head gates; because by removing the fastenings which hold the gate B, it will swing open and allow the water to pass, and when it is desirable to stop the flow of the water, it is easily done by releasing the gate E, and thus shutting off the water. This is easier to handle than the ordinary head-gate and is fully as efficient for all practical purposes.

Our automatic head or flood gate is designed to be used in any and all places where it is necessary to use any manner of head gate, flood gate, spill-way or any place where it is desired to control the flow of the water.

What we claim as our invention is—

1. In an automatic flood gate, the combination of a main gate pivoted at its upper end, an auxiliary overflow gate pivotally mounted above the main gate, a vertically sliding catch for securing the main gate in a closed position, guides for the catch, and a rod for connecting the auxiliary overflow gate with said catch, whereby upon the opening of the said overflow gate automatically by the pressure of the water, the catch will be released and the main gate also opened by the pressure of the water, substantially as described.

2. In an automatic flood gate the combination of a main gate, an auxiliary overflow gate, catches for securing the main gate, means connecting the auxiliary overflow gate with said catches and a water pressure resisting gate adapted to close in front of the main gate, substantially as described.

3. In an automatic flood gate the combination of a main gate, an auxiliary overflow gate, catches for securing the main gate, means connecting the auxiliary overflow gate with said catches, a water pressure resisting gate adapted to close in front of the main gate leaving a space between it and the main gate and provided with a water inlet port which communicates with the space between the gates, substantially as described.

4. In an automatic flood gate the combination of a main gate, an auxiliary overflow gate, sliding catches on the main gate for securing it in its closed position, operating rods connecting the auxiliary overflow gate and said catches for operating the latter upon the opening of said gate, a water pressure resisting gate adapted to close in front of the main gate, a pivoted beam provided at one end with a catch which is adapted to engage said gate and at its other end with a pendant arm adapted to be engaged by the main gate and in doing so disengage the catch from the water pressure resisting gate and thus permit the former gate to close, substantially as described.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

JOHN W. MILLIGAN.

JAMES A. TOMLINSON.

Witnesses to signature of John W. Milligan:

I. C. SANATO,

C. M. RAMSDELL.

Witnesses to signature of James A. Tomlinson:

R. O. HAMILTON,

S. R. CORBET.