No. 712,469. Patented Nov. 4, 1902.

J. H. ALEXANDER.

FLOOD GATE.

(Application filed Sept. 25, 1901.)

(No Model.)

Fig. 1.

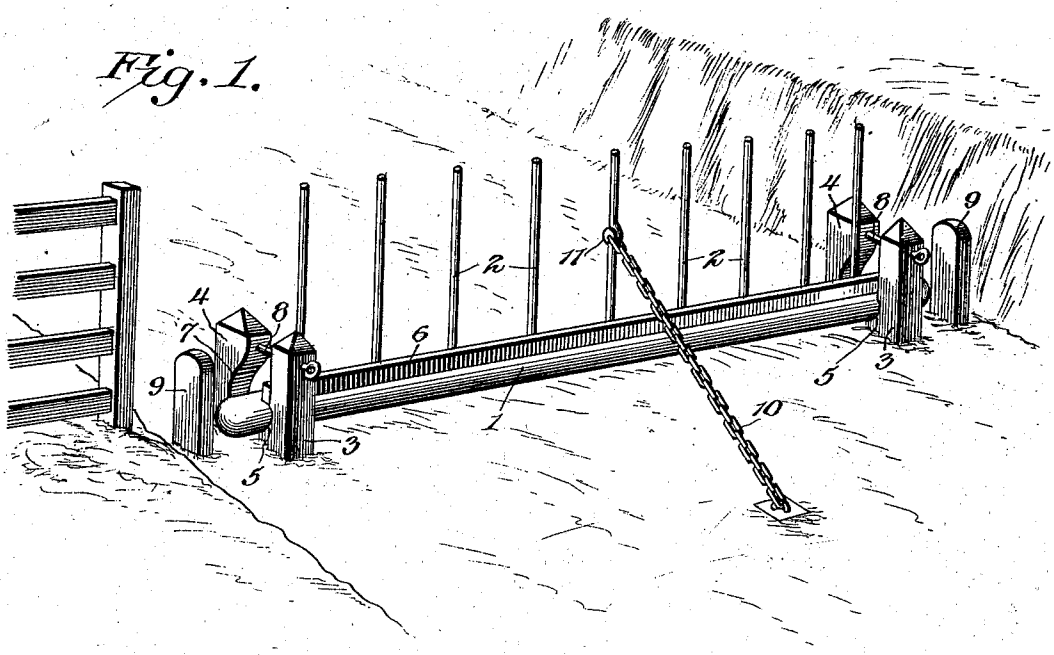


Fig. 2.

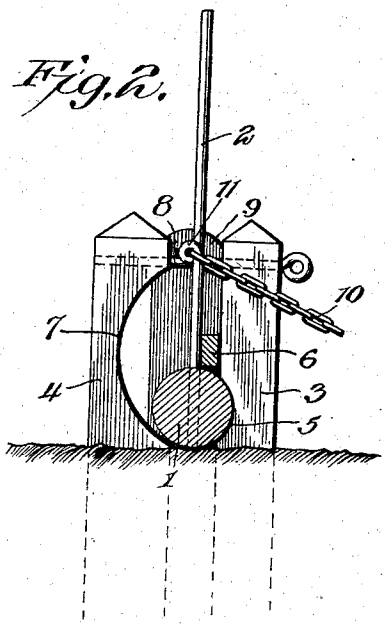
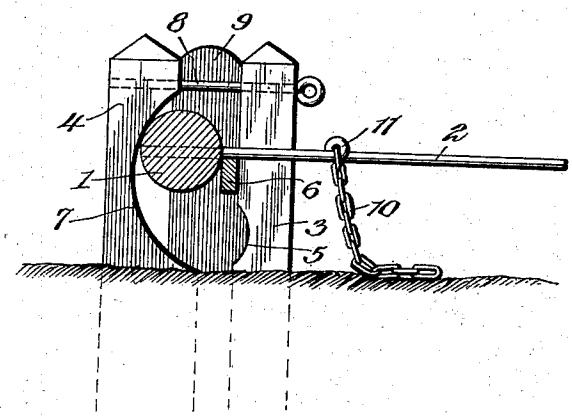


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FLOOD-GATE.

SPECIFICATION forming part of Letters Patent No. 712,469, dated November 4, 1902.

Application filed September 25, 1901. Serial No. 76,492. (No model.)

To all whom it may concern:

Be it known that I, JESSE HENLEY ALEXANDER, a citizen of the United States, residing at Williamstown, in the county of Lewis and State of Missouri, have invented a new and useful Flood-Gate, of which the following is a specification.

This invention relates to flood-gates, and is designed to provide an improve device of this character which is arranged to be normally held in an upright position, so as to form a stock-barrier across a stream and also depressed against the buoyant effect of the water, it also being designed to have the device capable of being tilted by excess water-pressure caused by the collection thereon of driftwood and the like, thereby to effectually shed the latter, and then to be automatically returned to and seated in its normal position under the guidance of the fixed portions of the device. It is furthermore designed to have the device constructed in a simple and inexpensive manner, so that it may be readily set up, and also to obviate loss of the gate after it has been tilted to shed the drift collected thereon without interfering with the quick and positive action of the gate under the influence of water-pressure.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a flood-gate constructed and arranged in accordance with the present invention. Fig. 2 is a transverse sectional view thereof. Fig. 3 is a similar view showing the gate tilted under the action of the excess water-pressure.

Similar characters of reference designate corresponding parts throughout the several figures of the drawings.

Referring to the accompanying drawings, it will be seen that the present gate embodies a substantially cylindrical beam or sill 1, from which rise a plurality of pickets 2, which are preferably formed by metallic bars, so as to give weight to the gate, and thereby sink the same against the buoyant action of the water. Should the pickets be made of wood, the beam or sill should be suitably weighted to prevent floating of the gate. For each end of the beam or sill there is provided a seat consisting of a pair of uprights or posts, of which the members thereof are respectively designated by the numerals 3 and 4, said posts lying on opposite sides of the adjacent end of the beam or sill. The inner side of the downstream-post 3 is provided with a concave recess 5, which is located at or adjacent to the bed of the stream into which the post is driven and forms a seat for the reception of one side of the beam or sill. A cross-bar 6 connects the opposite downstream-posts and is secured to the inner faces thereof and at the upper ends of the corresponding recesses 5, thereby bracing these posts and also normally lying longitudinally against the upper side of the beam or sill and in engagement with the pickets. The inner side of each upstream-post 4 is recessed or concaved, as at 7, for the entire length thereof to form a curved guide which is struck from the adjacent fulcrum connection of the gate as a center, the lower portion of the post being extended inwardly, so as to lie against the beam or sill, which, therefore, fits comparatively snugly between the lower ends of the posts, thereby to obviate lateral looseness of the sill. It will here be noted that the ends of the beam or sill form guide projections to direct the gate in its tilting movements. The upper ends of the respective post members are connected by a metallic rod 8, so as to brace the posts and also to form a stop to prevent upward displacement of the beam or sill. Outwardly beyond each end of the sill there is provided a stop-post 9 to limit the endwise movement of the sill. A chain or other flexible connection 10 has its lower end suitably anchored to the bottom of the stream and at the downstream side of the gate, the upper end of the chain being suitably connected to one of the intermediate pickets, as indicated at 11, thereby to prevent the gate from swinging in an upstream direction beyond its normal vertical position.

In the event of driftwood or the like collecting upon the gate there will be an excess water-pressure thereon, which will result in a tilting of the gate in a downstream direction upon the cross-bar 6 as a fulcrum, whereby the driftwood will be shed from the gate, and then the latter will tilt or rock back to its normal position under the action of the heavy sill or beam. It will here be noted that the curved inner faces of the upstream-posts 4 permit of the upward swing of the sill or beam and also form guides to direct the sill back to its original position in the seats 5 and beneath the cross-bar as the guides are struck from the respective fulcrum-points of the gate as centers. Thus the gate is automatic in its operation, and by means of the stop-rods 8 and stop-posts 9 it is effectually prevented from being washed from the confining-posts after it has been tilted to shed the driftwood collected thereon, and thereby the gate always remains in position to form an effective stock-barrier.

In view of the fact that the sill 1 is loosely mounted between the pairs of posts and is therefore capable of endwise movement the stop-posts 9 are located at a distance from the adjacent ends of the sill less than the distance between the ends of the gate proper or the end pickets and the guide-posts, whereby the sill will strike against one of the posts before the adjacent end picket or body portion of the gate comes in engagement with the adjacent pair of guide-posts, and therefore it is impossible for the gate to catch or hang in the guide-posts and prevent tilting thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a flood-gate, the combination with opposite pairs of posts, of a gate provided with a beam or sill having its opposite ends loosely mounted between the members of the respective pairs of posts, and a cross-bar connecting the downstream members of the opposite pairs of posts and normally lying in engagement with the gate to form a fulcrum upon which it is adapted to tilt.

2. In a flood-gate, the combination with a gate proper comprising a substantially cylindrical beam or sill having intermediate upstanding pickets rising therefrom, of opposite pairs of posts, the members of each pair of posts being located at opposite sides of the adjacent end of the beam, the lower portion of the inner face of the downstream-post member being provided with a recess or seat for the reception of the adjacent side portion of the beam or sill, the inner face of the other post member being provided with a curved recess extending upwardly from the lower end of the post and above the sill, and a cross-bar connecting the corresponding downstream-post members and applied to the inner sides thereof at the upper ends of the seats or recesses therein, said cross-bar lying longitudinally across the upper side of the sill or beam and also against the pickets to form a fulcrum upon which the gate is adapted to tilt.

3. In a flood-gate, the combination with a gate comprising a substantially cylindrical beam or sill, having upstanding pickets rising therefrom, of opposite pairs of posts located at the respective ends of the sill, corresponding posts being provided at the lower ends of the inner faces thereof with recesses or seats for the reception of the adjacent side portions of the sill, a cross-bar connecting said posts and applied to the inner sides thereof at the upper ends of the seats or recesses, said cross-bar lying across the top of the sill and against the pickets to form a fulcrum upon which the gate is adapted to tilt, the inner faces of the opposite posts being provided with curved recesses extending upwardly from the bottoms thereof, rods connecting the upper ends of the respective post members, stop-posts located at the opposite ends of the sill, and a flexible connection located upon the downstream side of the gate and having its opposite ends secured respectively to the gate and the bed of the stream.

4. In a flood-gate, the combination of opposite pairs of posts, of which the members of one set of corresponding posts are provided upon their inner sides with seats, and the inner sides of the other posts are provided with inclined guides leading downwardly and inwardly to the seats, and a vertically-tiltable gate having a bottom sill, the ends of which project beyond the opposite ends of the gate, and between the members of the respective pairs of posts, and normally lie in the said seats and work loosely in the respective guides.

5. In a flood-gate, the combination of opposite pairs of posts, and a vertically-tiltable gate provided with a base-sill having its ends projected beyond the gate and disposed loosely between the members of the respective pairs of posts, corresponding posts being provided in their inner faces with vertically-disposed curved guide-recesses which are struck from the fulcrum-line of the gate as a center and in which recesses the projected ends of the sills work.

6. In a flood-gate, the combination with opposite pairs of posts, of a vertically-tiltable gate having opposite terminal guide projections which work loosely between the members of the respective pairs of posts, and a cross-bar connecting the downstream-posts and normally lying against the gate to form a fulcrum therefor.

7. In a flood-gate, the combination with opposite pairs of posts, of a vertically-tiltable gate having opposite terminal guide projections at its lower edge and working loosely between the members of the respective pairs of posts, and a cross-bar applied to the inner faces of the downstream-posts and normally lying against the gate at a point above and adjacent to the guide projections to form a fulcrum for the gate.

8. In a flood-gate, the combination with opposite pairs of posts, of a gate provided at its lower end with a beam or sill having its opposite ends projected beyond the gate and working loosely between the members of the respective pairs of posts, a cross-bar applied to the inner faces of the downstream members of the opposite pairs of posts and normally lying in engagement with the gate at a point slightly above the beam or sill to form a fulcrum upon which the gate is adapted to tilt, and opposite stop-posts alined with and located outwardly beyond the respective ends of the sill, the distance between the ends of the sill and the adjacent stop-posts being less than the distance between the corresponding ends of the gate-body and the respective guide-posts.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JESSE HENLEY ALEXANDER.

Witnesses:
ALEX SMITH,
H. S. SMITH.