No. 664,078. Patented Dec. 18, 1900.

E. S. FRANK & W. H. KUHLMAN.

FLOOD GATE.

(Application filed Mar. 31, 1900.)

(No Model.)

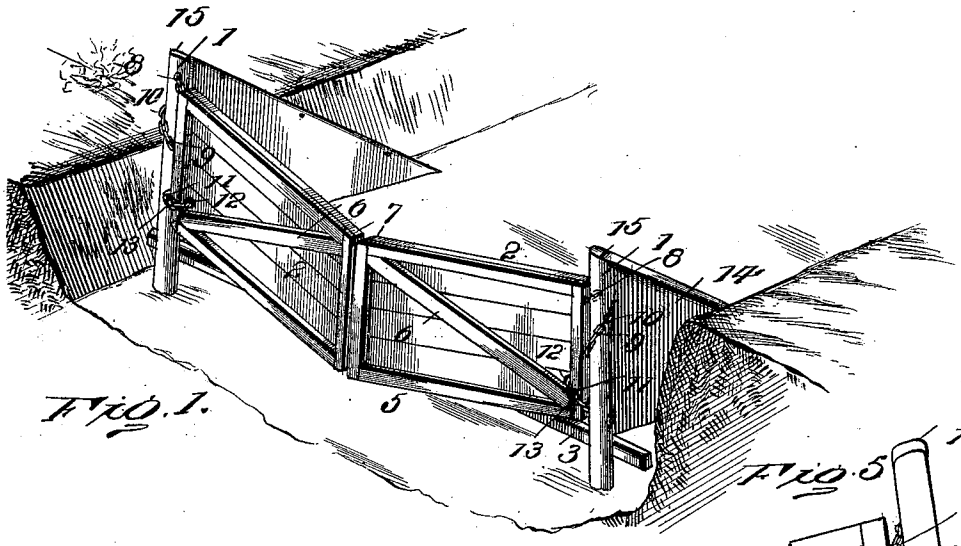


Fig. 1.

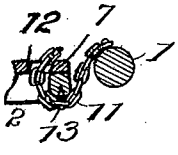


Fig. 6.

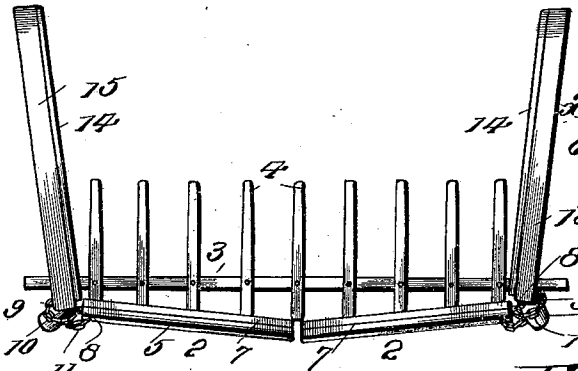


Fig. 2.

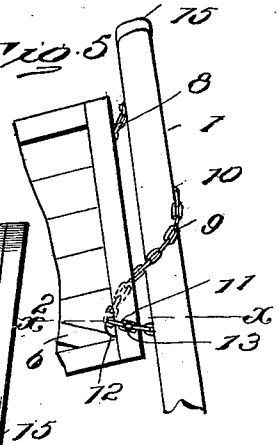


Fig. 5.

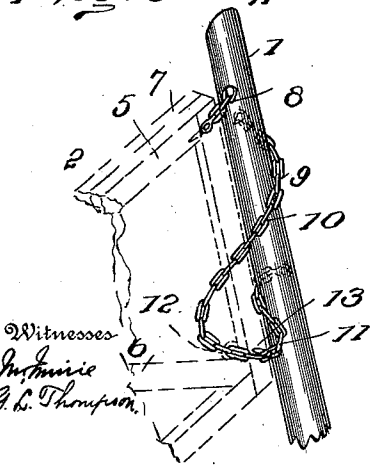


Fig. 3.

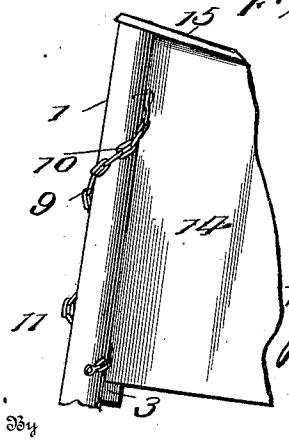


Fig. 4.

Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD S. FRANK, OF CLAYTON, AND WILLIAM H. KUHLMAN, OF BEARDSTOWN, ILLINOIS.

FLOOD-GATE.

SPECIFICATION forming part of Letters Patent No. 664,078, dated December 18, 1900.

Application filed March 31, 1900. Serial No. 10,964. (No model.)

To all whom it may concern:

Be it known that we, EDWARD S. FRANK, residing at Clayton, in the county of Adams, and WILLIAM H. KUHLMAN, residing at Beardstown, in the county of Cass, State of Illinois, citizens of the United States, have invented certain new and useful Improvements in Flood-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 art to which it appertains to make and use the same.

This invention relates to flood-gates which form a part of an inclosing fence and extend over a waterway or stream and which automatically open to provide clearance for drift during an abnormal rise in the water and which automatically close after all danger has passed, thereby preventing washing away of the portion of the fence or inclosure over the stream or water-course.

The invention also consists of the novel features, details of construction, and combination of the parts, which hereinafter will be more fully disclosed and finally claimed, and for this purpose and also to acquire a knowledge of the merits of the invention and the structural details of the means whereby the results are attained reference is to be had to the appended description and the drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment thereof is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing the application of the invention. Fig. 2 is a top plan view. Fig. 3 is a perspective view of a post and the flexible hinge connections between it and the gate, the latter being shown in dotted lines. Fig. 4 is a fragmentary side view. Fig. 5 is a front view of the upper part of a post and the adjacent portion of a gate. Fig. 6 is a section on the line X X of Fig. 5.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Companion posts 1 have their lower ends let into the bed of the stream, creek, or other waterway and incline toward each other and upstream at their upper ends. The gates 2 are hinged to the posts 1 in a manner presently to be described. A sill or timber 3 extends over the bed of the stream or waterway and is firmly attached at its ends to the lower portions of the posts 1 and is located about eight to ten inches above the normal level of the water. Stakes or slats 4 are located upon the upstream side of the sill 3 and incline rearwardly and upwardly and project a short distance beyond the downstream side of the said sill. These stakes 4 have their lower ends embedded in the bottom of the stream or waterway and are spaced any desirable distance apart and are provided in sufficient number to extend from one post to the other. The inclined stakes 4 and the beam or sill 3 constitute a stock-guard to prevent the passage of certain stock beyond the inclosure in either direction.

The gates may be of any suitable construction and outline and in the present instance are shown as composed of a frame 5, of rectangular form, brace 6, and boards 7, secured to one side of the frame. The lower edge portions of the gates rest against the projecting ends of the stakes 4 and are normally positioned thereby. The gates are similarly hinged to the posts 1 by means of flexible connections 8 and 9, which may be of any formation, short lengths of chain being preferred and best adapted for the purpose. The upper connection 8 is approximately six inches in length and secured at its ends to the post 1 and the end batten or hinge bar of the gate, respectively. The flexible connection or chain 9 is about five to six feet in length, and its ends are firmly attached to the upstream side of the post 1 at points about three feet apart. The intermediate portion of the hinge connection 9 passes spirally around the post 1 in one direction, as shown at 10, thence around the end batten of the gate in a reverse direction, as shown at 11, and through an opening 12 in the gate. In order to prevent slipping, the flexible hinge connection 9 is positively connected with the gate by a fastening 13,

which engages with a link of the chain and enters the end batten of the gate. The swing end of the gate tends to sag, and the hinge end inclines upstream at its upper end. Hence when the gates open under the pressure of drift or from other cause they normally tend to close and when relieved from the restraining influence automatically close. It will be observed, further, that as the gates swing open the lower ends of the flexible hinge members 9 wind about the end battens and to tighten the spiral connection, while at the same time the upper connection 8, which is the effective support to prevent sagging of the gate, will be partially wound about the post. This winding and tightening effect tends to raise the swing end of the gate and put a strain or tension on the spiral connection 9, with the effect to cause the gate to automatically close.

A chute is located upon the upstream side of the plane of the gates to prevent the water from washing around the posts 1 and between them and the banks, and this chute consists of wings 14 of tapering form. A pole or beam 15 is made fast to the upper end of each of the posts 1 and inclines upstream, and its lower end is let into the bed of the waterway. Boards are secured at their ends to the poles 15 and adjacent posts 1 and constitute the wings which direct drift through the space normally closed by the gates 2.

The sill 3 is preferably a single timber, although it is contemplated to form it of poles spliced when a single beam cannot be conveniently obtained. The boards covering the frames of the gates are attached to the said frames horizontally and upon the upstream side to present a smooth surface and prevent strain upon the fastenings.

Having thus described the invention, what is claimed as new is—

1. In combination with a post and a gate, a flexible hinge connecting said parts and passing spirally around the post and hinge member of the gate in reverse directions, substantially as set forth.

2. In combination with a post and a gate, a flexible hinge connection having its terminals secured to one of the parts at remote points and having the intermediate portion secured to the other part, said hinge connection passing spirally around the said parts in reverse directions, substantially as set forth.

3. In combination with a post and a gate, a straight, flexible connection between the top of the gate and the post, and a second flexible hinge connection between the bottom end of the gate and the said post and having its terminals secured to the latter at different elevations and its intermediate portions made fast to the gate and having the part intermediate of its extremities passing spirally around the post and hinge member of the gate in reverse directions, substantially as set forth.

4. In combination, posts having their upper ends inclined toward each other and upstream, automatically-closing gates hinged to the posts by means of flexible connections, wings extending from said posts upstream in the manner stated, a sill located above the bed of the stream and attached at its ends to the lower portions of the posts, and upwardly and rearwardly inclined stakes spaced apart and secured at their upper ends to the sill and projecting beyond the same to engage with and limit the closing of the gates, and having their lower ends let into the bed of the stream, substantially as described.

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

EDWARD S. FRANK. [L. S.]
WILLIAM H. KUHLMAN. [L. S.]

Witnesses to Edward S. Frank:
G. W. SARGENT,
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W. G. MOHLMANN,
GEO. H. HUSS.