S. Hudson,

Water Gate,

No. 29,887. Patented Sep. 4. 1860.

Fig. 1.

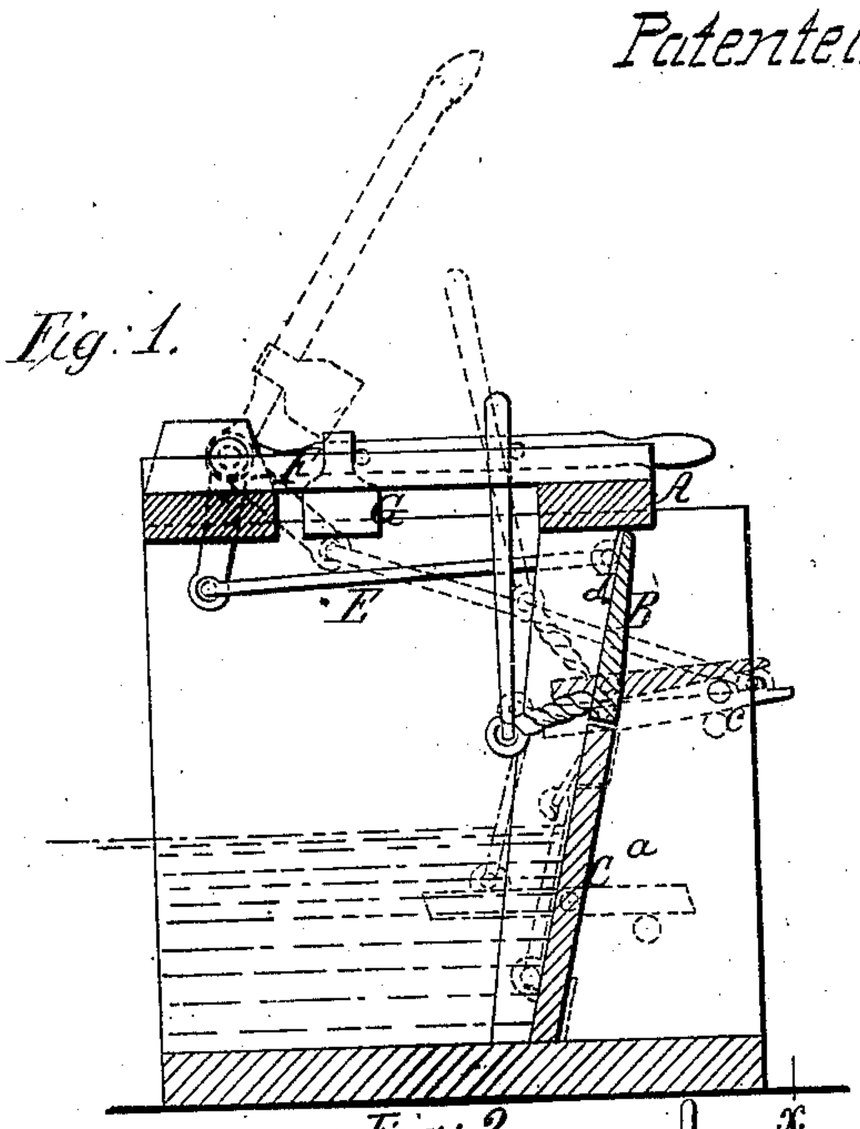


Fig. 2.

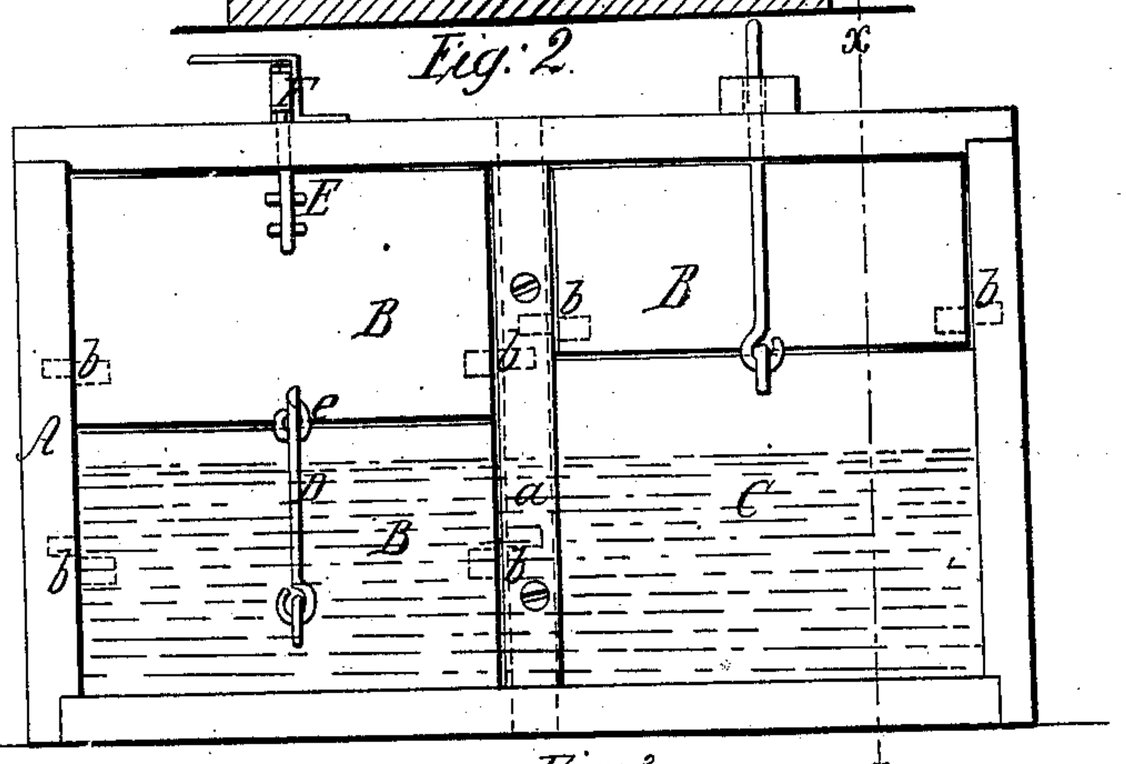
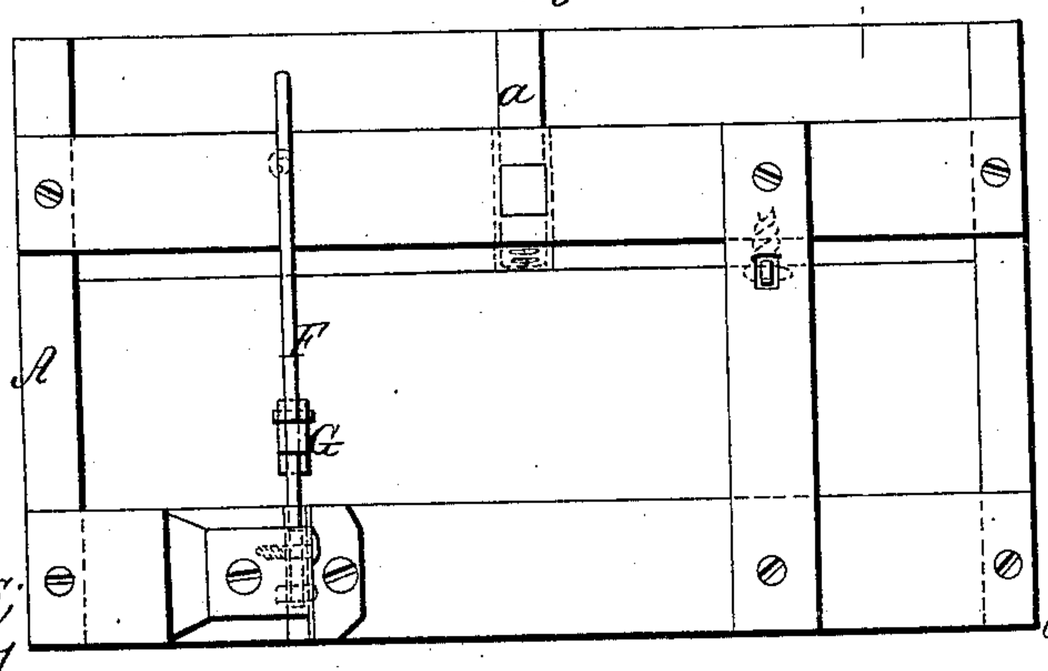


Fig. 3.



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UNITED STATES PATENT OFFICE.

SIDNEY HUDSON, OF MILFORD, MICHIGAN.

SELF-ACTING WASTE-GATE FOR MILL-DAMS.

Specification of Letters Patent No. 29,887, dated September 4, 1860.

To all whom it may concern:

Be it known that I, SIDNEY HUDSON, of Milford, in the county of Oakland and State of Michigan, have invented a Self-Acting Waste-Gate for Mill-Dams; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a vertical section of my invention taken in the plane *x*, *x*, Fig. 2; Fig. 2, a back view of the same; Fig. 3, a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention has for its object the preventing of the washing away of mill-dams by freshets, and by such a means that will be automatic in its operation; that is to say, self-acting, requiring no special manipulation, and therefore performing at any moment when required its proper function.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents a framing of rectangular form constructed in a strong manner and divided into sections by an upright *a*, one or more, according to the length of the framing. If the framing requires to be of considerable height, its posts or uprights may be braced in any suitable way to obtain strength and durability.

The framing A, is fitted in an opening in the mill dam of such dimensions as previously stated as to allow the water of the stream to pass freely through during its greatest flow. Within the framing A, gates D, are fitted. These gates are of rectangular form and they are hung in the framing horizontally on journals or gudgeons *b*, and open in the direction as indicated in Fig. 1, a gate being shown in red in an open state in said figure. The gates when fully open rest on steps *c*, in the framing and when closed they bear against steps *d*. In the framing A, at one side of the upright *a*, there is represented one gate only; a permanent planking C, being beneath it. At the other side of the upright *a*, there are two gates connected by a link D.

To the upper gate B of the two above mentioned, there is connected by a rod E, a bent lever F. This lever has a sliding weight G, upon it, the gravity of which in connection with that of the lever, has a tendency to keep the gate closed, and also the one immediately below, in consequence of the latter being connected to the former, by the link D. The upper end of the link D, has an oblong slot formed in it through which a staple *e*, in the upper gate B, passes. This oblong slot admits of the upper gate opening some distance, before the lower one is actuated.

From the above description the operation will be readily seen. When the water rises to an undue height within the dam so as to exert a considerable pressure on the gates and dam, and as much as the latter can safely resist, the gates will open under the pressure, and allow the water to pass through, and the amount of pressure under which the gates will open may be regulated by adjusting weight G. The top gate B, at the left side of the upright *a*, opens first moving a certain distance alone, and then through the medium of link D, opens the lower gate as shown in red in Fig. 1. In certain cases where the supply of water fluctuates greatly, and freshets are frequent and impetuous, it would of course be desirable to have the framing supplied with the upper and lower gates. In other cases where there is a pretty even flow, one gate arranged as shown at the right of upright *a*, would be sufficient. The upper gates should have their journals or gudgeons below their centers; the loaded levers serve as counterpoise to bring the gates back to a closed state when the flow subsides, but the lower gates, if employed, should have their journals at about their centers so as to be counterpoised thereon or nearly so and render their opening easy.

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

The combination with the pivoted gates B, C, of the adjustable counterpoise G, bent lever F, rod E, and connecting link D, when all the parts are arranged and constructed to operate together as and for the purpose herein shown and described.

SIDNEY HUDSON.

Witnesses:
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